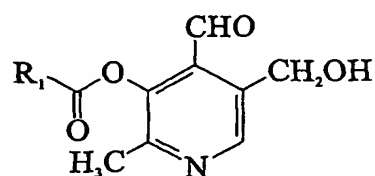


WE CLAIM:

1. A method of modulating cell death comprising administering a therapeutically effective amount of at least one of pyridoxal-5'-phosphate, pyridoxic acid, pyridoxal, pyridoxine, or pyridoxamine.
2. A method of modulating cell death comprising administering a therapeutically effective amount of at least one compound of the formula



wherein

R_1 is alkyl or alkenyl, in which alkyl or alkenyl can be interrupted by nitrogen, oxygen, or sulfur, and can be substituted at the terminal carbon by hydroxy, alkoxy, alkanoyloxy, alkanoyloxyaryl, alkoxyalkanoyl, alkoxycarbonyl, or dialkylcarbamoyloxy;

alkoxy;

dialkylamino;

alkanoyloxy;

alkanoyloxyaryl;

alkoxyalkanoyl;

alkoxycarbonyl;

dialkylcarbamoyloxy;

aryl, aryloxy, arylthio, or aralkyl, in which aryl can be substituted by

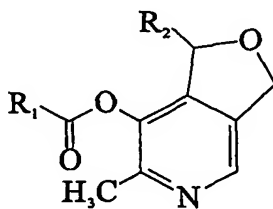
alkyl, alkoxy, amino, hydroxy, halo, nitro, or

alkanoyloxy; or

a pharmaceutically acceptable salt thereof.

3. The method of claim 2, wherein said R_1 is phenyl or naphthyl in which phenyl or naphthyl is unsubstituted or substituted by one or more groups of C_{1-4} alkyl, C_{1-4} alkoxy, amino, hydroxy, halo, nitro, or C_{1-4} alkanoyloxy.

4. The method of claim 2, wherein said R₁ is (2-acetoxy-2-methyl)propanyl, dimethylamino, or 1-ethanoyloxy-1-methylethyl.
5. The method of claim 2, wherein said R₁ is *tert*-butyl.
6. The method of claim 2, wherein said R₁ is methoxy or ethoxy.
7. The method of claim 2, wherein said R₁ is toluyl, naphthyl, phenyl, acetylphenyl, or 1-ethanoyloxyphenyl.
8. The method of claim 2, wherein said R₁ is acetylsalicyl, dimethylamino, or 2,2-dimethylethyl.
9. The method of claim 2, wherein said compound is 2-methyl-3-toluoyloxy-4-formyl-5-hydroxymethylpyridine.
10. The method of claim 2, wherein said compound is 2-methyl-3- β -naphthoyloxy-4-formyl-5-hydroxymethylpyridine.
11. A method of modulating cell death comprising administering a therapeutically effective amount of at least one compound of the formula



wherein

R₁ is alkyl or alkenyl, in which alkyl or alkenyl can be interrupted by nitrogen, oxygen, or sulfur, and can be substituted at the terminal carbon by hydroxy, alkoxy,

alkanoyloxy, alkanoyloxyaryl, alkoxyalkanoyl,
alkoxycarbonyl, or dialkylcarbamoyloxy;

alkoxy;

dialkylamino;

alkanoyloxy;

alkanoyloxyaryl;

alkoxyalkanoyl;

alkoxycarbonyl;

dialkylcarbamoyloxy;

aryl, aryloxy, arylthio, or aralkyl, in which aryl can be substituted by

alkyl, alkoxy, amino, hydroxy, halo, nitro, or

alkanoyloxy; and

R₂ is a secondary amino group; or

a pharmaceutically acceptable salt thereof.

12. The method of claim 11, wherein said R₁ is phenyl or naphthyl in which phenyl or naphthyl is unsubstituted or substituted by one or more groups of C₁₋₄ alkyl, C₁₋₄ alkoxy, amino, hydroxy, halo, nitro, or C₁₋₄ alkanoyloxy.

13. The method of claim 11, wherein said R₁ is (2-acetoxy-2-methyl)propanyl, dimethylamino, or 1-ethanoyloxy-1-methylethyl.

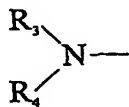
14. The method of claim 11, wherein said wherein R₁ is *tert*-butyl.

15. The method of claim 11, wherein said wherein R₁ is methoxy or ethoxy.

16. The method of claim 11, wherein said R₁ is toluyl, naphthyl, phenyl, or 1-ethanoyloxyphenyl.

17. The method of claim 11, wherein said R₁ is dimethylamino, acetylsalicyl, or 2,2-dimethylethyl.

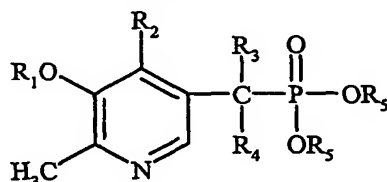
18. The method of claim 11, wherein said R_2 is a group of the formula



wherein R_3 and R_4 are each independently alkyl or when taken together form a ring with the nitrogen atom and which ring may optionally be interrupted by a nitrogen or oxygen atom.

19. The method of claim 11, wherein said R_2 is piperidino.
20. The method of claim 11, wherein said R_2 is morpholino or piperazino.
21. The method of claim 11, wherein said compound is 1-morpholino-1,3-dihydro-7-(*p*-toluoyloxy)-6-methylfuro(3,4-*c*)pyridine.
22. The method of claim 11, wherein said compound is 1-morpholino-1,3-dihydro-7-(β -naphthoyloxy)-6-methylfuro(3,4-*c*)pyridine.
23. The method of claim 11, wherein said compound is 1-morpholino-1,3-dihydro-7-pivaloyloxy-6-methylfuro(3,4-*c*)pyridine.
24. The method of claim 11, wherein said compound is 1-morpholino-1,3-dihydro-7-(dimethylcarbamoyloxy)-6-methylfuro(3,4-*c*)pyridine.
25. The method of claim 11, wherein said compound is 1-morpholino-1,3-dihydro-7-acetylsalicyloxy-6-methylfuro(3,4-*c*)pyridine.

26. A method of modulating cell death comprising administering a therapeutically effective amount of at least one compound of the formula



wherein

R₁ is hydrogen or alkyl;

R₂ is -CHO, -CH₂OH, -CH₃, -CO₂R₆ in which R₆ is hydrogen, alkyl, or aryl;

or

R₂ is -CH₂O-alkyl- in which alkyl is covalently bonded to the oxygen at the 3-position instead of R₁;

R₃ is hydrogen and R₄ is hydroxy, halo, alkoxy, alkanoyloxy, alkylamino or arylamino; or

R₃ and R₄ are halo; and

R₅ is hydrogen, alkyl, aryl, aralkyl, or -CO₂R₇ in which R₇ is hydrogen, alkyl, aryl, or aralkyl;

or a pharmaceutically acceptable salt thereof.

27. The method of claim 26, wherein said R₁ is hydrogen.

28. The method of claim 26, wherein said R₂ is -CH₂OH, or -CH₂O-alkyl- in which alkyl is covalently bonded to the oxygen at the 3-position instead of R₁.

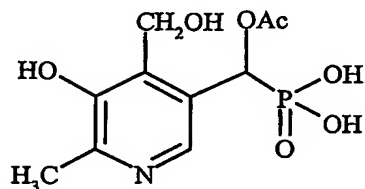
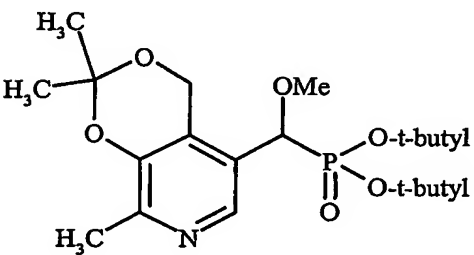
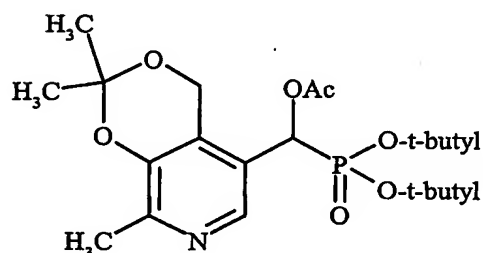
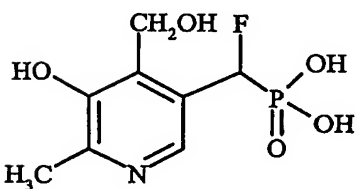
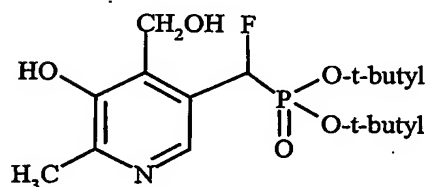
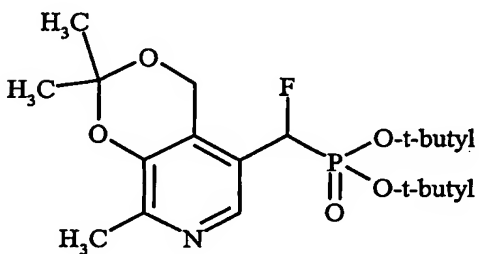
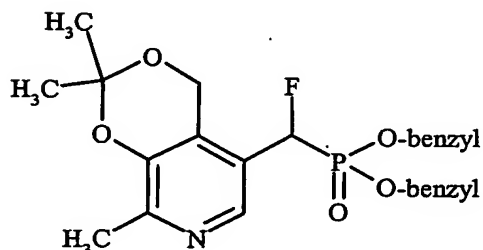
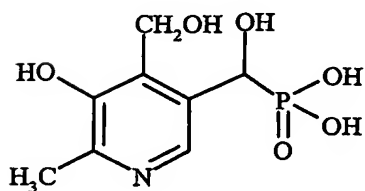
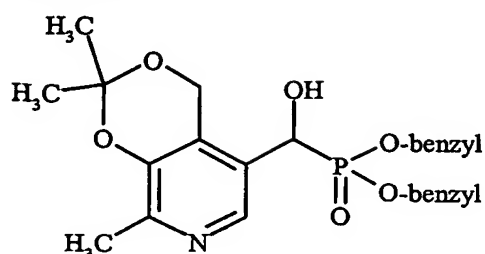
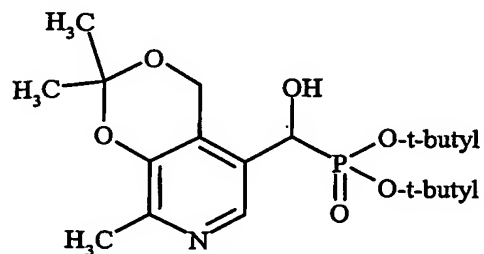
29. The method of claim 26, wherein said R₃ is hydrogen and R₄ is F, MeO-, or CH₃C(O)O-.

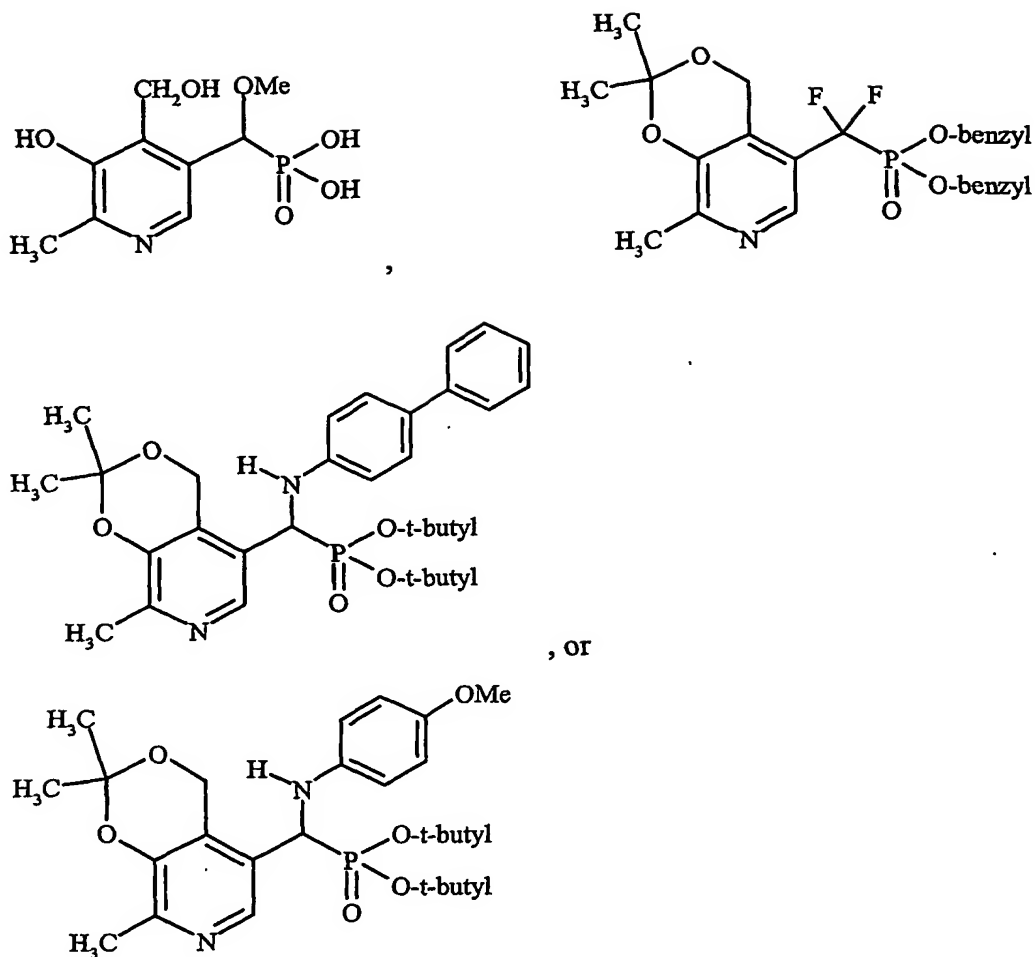
30. The method of claim 26, wherein said R₃ and R₄ are F.

31. The method of claim 26, wherein said R₅ is alkyl or aralkyl.

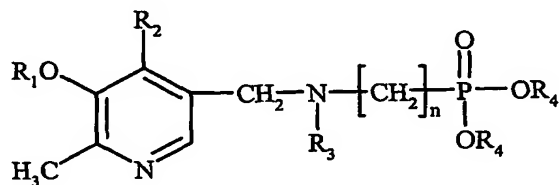
32. The method of claim 26, wherein said R₅ is t-butyl or benzyl.

33. A method of claim 26, wherein said compound is





34. A method modulating cell death comprising administering a therapeutically effective amount of at least one compound of the formula



wherein

R_1 is hydrogen or alkyl;

R_2 is $-CHO$, $-CH_2OH$, $-CH_3$ or $-CO_2R_5$ in which R_5 is hydrogen, alkyl, or aryl; or

R_2 is $-CH_2O$ -alkyl- (in which alkyl is covalently bonded to the oxygen at the 3-position instead of R_1);

R_3 is hydrogen, alkyl, aryl, or aralkyl;

R_4 is hydrogen, alkyl, aryl, aralkyl, or $-\text{CO}_2R_6$ in which R_6 is hydrogen, alkyl, aryl, or aralkyl; and

n is 1 to 6;

or a pharmaceutically acceptable salt thereof.

35. The method of claim 34, wherein said R_1 is hydrogen.

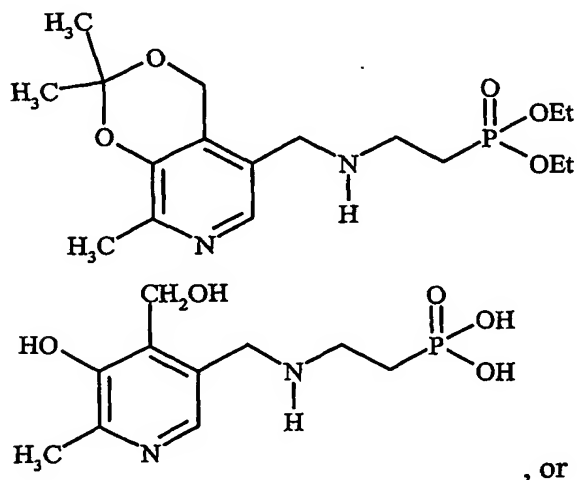
36. The method of claim 34, wherein said R_2 is $-\text{CH}_2\text{OH}$, or $-\text{CH}_2\text{O-alkyl-}$ in which alkyl is covalently bonded to the oxygen at the 3-position instead of R_1 .

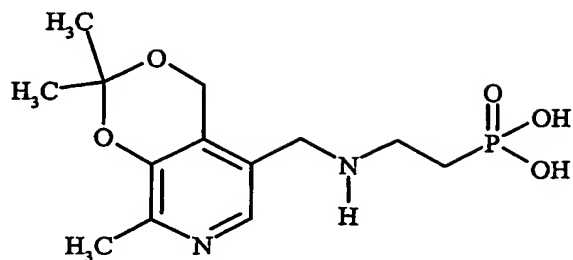
37. The method of claim 34, wherein said R_3 is hydrogen.

38. The method of claim 34, wherein said R_4 is alkyl or H.

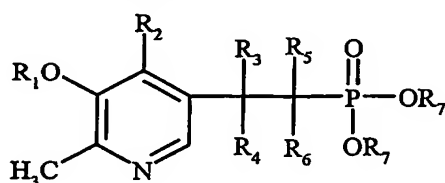
39. The method of claim 34, wherein said R_4 is ethyl.

40. The method of claim 34, wherein said compound is





41. A method modulating cell death comprising administering a therapeutically effective amount of at least one compound of the formula



in which

R₁ is hydrogen or alkyl;

R₂ is -CHO, -CH₂OH, -CH₃ or -CO₂R₈ in which R₈ is hydrogen, alkyl, or aryl; or

R₂ is -CH₂-O-alkyl- in which alkyl is covalently bonded to the oxygen at the 3-position instead of R₁;

R₃ is hydrogen and R₄ is hydroxy, halo, alkoxy or alkanoyloxy; or

R₃ and R₄ can be taken together to form =O;

R₅ and R₆ are hydrogen; or

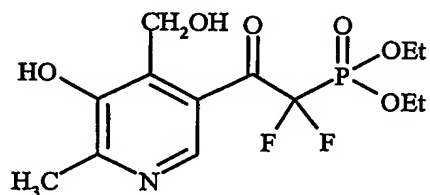
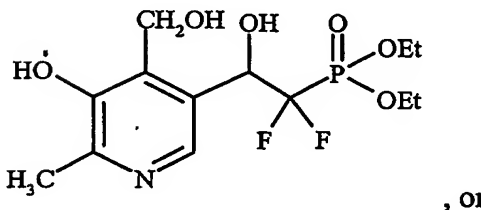
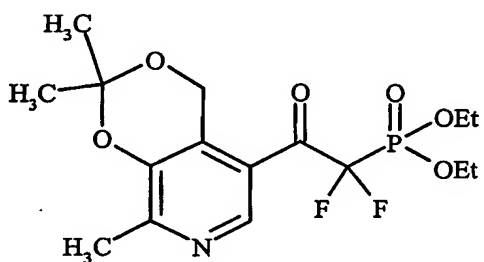
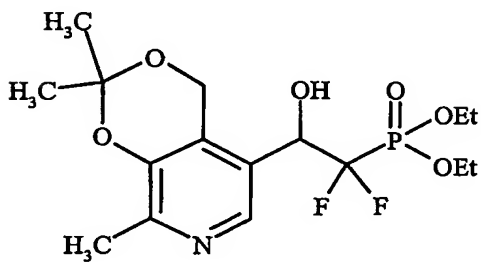
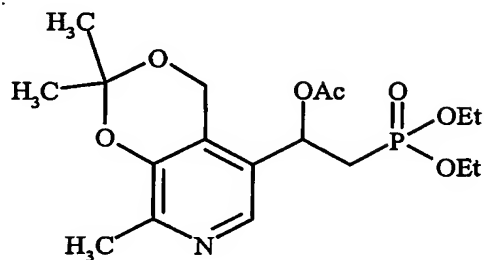
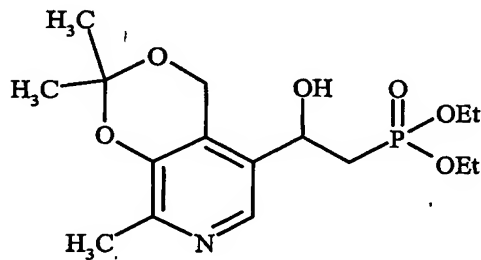
R₅ and R₆ are halo; and

R₇ is hydrogen, alkyl, aryl, aralkyl, or -CO₂R₈ in which R₈ is hydrogen, alkyl, aryl, or aralkyl;

or a pharmaceutically acceptable salt thereof.

42. The method of claim 41, wherein R₁ is hydrogen.
43. The method of claim 41, wherein R₂ is -CH₂O or -CH₂-O-alkyl- in which alkyl is covalently bonded to the oxygen at the 3-position instead of R₁.
44. The method of claim 41, wherein said R₄ is -OH or CH₃C(O)O-.

45. The method of claim 41, wherein said R_3 and R_4 taken together form $=O$.
46. The method of claim 41, wherein said R_5 and R_6 are F.
47. The method of claim 41, wherein said R_7 is alkyl.
48. The method of claim 41, wherein said R_7 is ethyl.
49. The method of claim 41, wherein said compound is



, or